

THE OFFICE ACTION

In the Office Action issued on March 25, 2004, the Examiner restated his restriction requirement grouping the pending claims into group I (claims 1-9, and 14-19) and group II (Claims 10-13) and requesting affirmation of the provisional election of the group I claims. The Examiner objected to claim 6 as reciting the limitation "light emitting diode element" without any recitation of the term "diode" in either of claims 1 or 3. The Examiner rejected claims 1-3, 5, 6 and 14-19 under 35 U.S.C. §102(e) as being anticipated by U.S. Patent No. 6,576,930 to Reeh et al. ("Reeh"). The Examiner further rejected claim 10 under 35 U.S.C. §102(e) as being anticipated by U.S. Patent No. 6,015,719 to Kish et al. ("Kish"). The Examiner also rejected claim 4 under 35 U.S.C. §103(a) as being unpatentable over Reeh. The Examiner also rejected claim 9 under 35 U.S.C. §103(a) as being unpatentable over Reeh in view of U.S. Patent No. 5,777,433 to Lester et al. ("Lester"). The Examiner further rejected claim 7 under 35 U.S.C. §103(a) as being unpatentable over Reeh in view of Lester and further in view of Kish. The Examiner indicated that claim 8 contained allowable subject matter and would be allowable if rewritten in independent form.

REMARKS

Applicants have carefully considered the Office Action issued on March 25, 2004. Applicants respectfully request reconsideration of the application in light of the above amendments and the following comments.

An amendment has been made to claim 6 to remove the term "diode". Withdrawal of the objection is requested.

A. The Restriction Requirement

Applicants affirm the election of the claims of group I (claims 1-9 and 14-19) for prosecution. However, applicants traverse this rejection based on the following reasoning. In support of his restriction requirement, the Examiner stated "[f]or example the product can be made by placing the light emitting device in the mounting area, covering with encapsulation having a volume same as that of the mounting area and then curing the encapsulation along with the light emitting device." Applicants submit that the above described process would not produce the present lamp in which the light emitting element is supportably surrounded by a suspension media disposed between a mounting area and the light emitting element. In the Examiner's proposed process, the

light emitting element would rest on a surface of the mounting area, as there is nothing to initially support it. In the presently claimed device, however, the suspension media completely surrounds the light emitting element and supports it (i.e. the light emitting element does not rest on the mounting area). For this reason, applicants submit that the Examiner's restriction requirement is improper and should be withdrawn.

B. Claims 1-3, 5, 6 and 14-19 are not Anticipated by Reeh

The Examiner rejected claims 1-3, 5, 6 and 14-19 under 35 U.S.C. §102(e) as being anticipated by Reeh. Applicants respectfully traverse.

With reference to Figure 5 therein, Reeh discloses a solid state lamp including a light emitting element 1, a mounting frame 16 having a recess in which the light emitting element 1 is mounted. A luminescence conversion encapsulation 5 (i.e. a suspension medium) is disposed over the light emitting element in the recess. However, Reeh fails to disclose or suggest wherein the encapsulation supports and surrounds the light emitting element. In this respect, the relevant disclosures of Reeh as cited by the Examiner (Figure 5; column 11 lines 45-67; and column 13 lines 47-67) only disclose wherein the encapsulation covers the top and side surfaces of the light emitting element. As can be most clearly seen in Figure 5 of Reeh, the encapsulation does not "supportably surround" the light emitting element as required by claim 1. Neither does it act as a "spacing element" spacing the light emitting element from the mounting frame, as required by claim 14. Rather, the light emitting element in Reeh is attached on its bottom surface to the mounting frame. Thus, because the light emitting element is not spaced apart from the mounting frame nor is it supported by the encapsulation, Reeh clearly fails to anticipate claims 1-3, 5, 6 and 14-19. Withdrawal of this rejection is respectfully requested.

C. Claim 14 is not Anticipated by Kish

The Examiner rejected claim 14 under 35 U.S.C. §102(e) as being anticipated by Kish. Applicants respectfully traverse.

As amended, claim 14 now incorporates the recitation of original claim 15, i.e. that the spacing element comprises an optically inert transparent media. Kish clearly denotes that the Ag epoxy (12 in Fig. 12) is reflective to light (column 1, lines 63-67). Thus, applicants submit that Kish fails to anticipate claim 14.

D. Claim 4 is not Obvious over Reeh

The Examiner rejected claim 4 under 35 U.S.C. §103(a) as being unpatentable over Reeh. Applicants respectfully traverse.

The Examiner stated that although Reeh does not explicitly disclose layers comprising thermally conductive fillers, it does disclose a second layer comprising light diffusing particles such as TiO₂ and SiO₂. The Examiner believed that such particles inherently possess thermally conductive properties. Even if such an assertion is true, Reeh fails to disclose or suggest wherein the light emitting element is “supportably surrounded” by a suspension media, as required by parent claim 1. Thus, claim 4 is not obvious over Reeh.

E. Claim 9 is not Obvious Over Reeh in View of Lester

The Examiner rejected claim 9 under 35 U.S.C. §103(a) as being unpatentable over Reeh in view of Lester. Applicants respectfully traverse.

With regard to claim 9, the Examiner stated that Reeh fails to disclose dielectric particles (TiO₂, SiO₂) as being nano-particles. The Examiner cites Lester as disclosing that nano-particles of TiO₂ in a packaging material improves the efficiency of the device by increasing the refractive index of the encapsulating material and that it would have been obvious to one of ordinary skill in the art to include such particles. Even assuming the truth of this statement and the propriety of combining the two references, such a proposed combination would still not disclose or suggest all of the recitations of the claim 9. Specifically, claim 9 depends from claim 1 and thus includes all of the recitations therein. Such a proposed combination would not disclose a lamp wherein a suspension media is disposed between a mounting area and a light emitting element and supportably surrounds the light emitting element. Applicants thus request withdrawal of this rejection.

F. Claim 7 is not Obvious Over Reeh in View of Lester and Further in View of Kish

The Examiner rejected claim 7 under 35 U.S.C. §103(a) as being unpatentable over Reeh in view of Lester and further in view of Kish. Applicants respectfully traverse.

With regard to claim 7, the Examiner stated that Reeh and Lester fail to disclose thermally conductive filler selected from the set of gold and silver. The Examiner cites Kish as disclosing silver loaded epoxy used in semiconductor light emitting devices and that it would have been obvious to one of ordinary skill in the art to include such particles. Even assuming the truth of this statement and the propriety of combining all three references, such a proposed combination would still not disclose or suggest all of the recitations of the claim 7. Specifically, claim 7 depends from claim 1 and thus includes all of the recitations therein. Such a proposed combination would not disclose a lamp wherein a suspension media is disposed between a mounting area and a light emitting element and supportably surrounds the light emitting element. Applicants thus request withdrawal of this rejection.

CONCLUSION

In view of the foregoing comments, Applicants submit that all pending claims are in condition for allowance. Applicants respectfully request early notification of such allowance. Should any issues remain unresolved, the Examiner is encouraged to contact the undersigned to attempt to resolve any such issues.

If any fee is due in conjunction with the filing of this response, Applicants authorize deduction of that fee from Deposit Account 06-0308.

Respectfully submitted,

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